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by the dotted lines, fig. 3; and lastly through the brass plate *a*, and are terminated by thumb-screws, which, when screwed down, bind the knife firmly in its place, and when screwed off, allow the knife to be sharpened, or another to be substituted for it: *b c* is the handle, terminating in a screw, by means of which the two cheeks *d e* of the plough may be set at the required distance from each other.

No. IX.

GAUGE FOR STANDING CASKS, AND CELLAR CANDLESTICK.

The SILVER ISIS MEDAL was presented to Mr. GEORGE HENEKEY, of Holborn, for his Gauge for Standing Casks, and his Cellar Candlestick; Models of both which have been placed in the Society's Repository.

THE object of Mr. Henekey, in the first of these inventions, has been to enable the excise officer or spirit-dealer to know the contents of a standing cask by simple inspection.

For this purpose he has adopted, but with certain modifications, a plan already used in the construction of gas-holders, and some other vessels. It consists in fastening an upright glass tube, open at both ends, to the outside of the vessel, and connecting the bottom of the tube and of the vessel by a horizontal pipe, so that at whatever height the water or other liquid stands in the cask, it will stand at the same height in the tube. A graduated scale is also fixed parallel with the tube, on which are marked the number of measures, pints, quarts, or gallons, corresponding with each degree of the scale. The novelty and peculiar advantage of Mr. Henekey's gauge consist, first, in the practical application of it to the business of the dealer in spirits; and, secondly, in the mode in which he has connected the cock of the cask with the glass tube, so as to prevent any loss of liquor by leakage, if the tube happen to be accidentally broken.

Fig. 1 represents the model in the Society's possession. Fig. 2 is the cock *c* in fig. 1, on a larger scale: it has

Fig. 1.

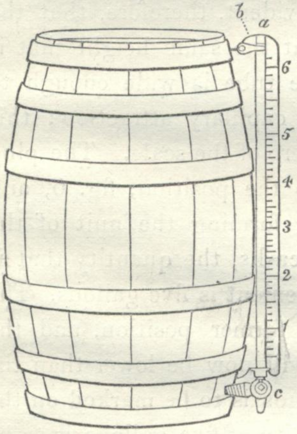
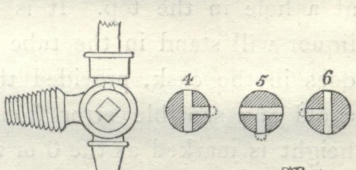


Fig. 2.



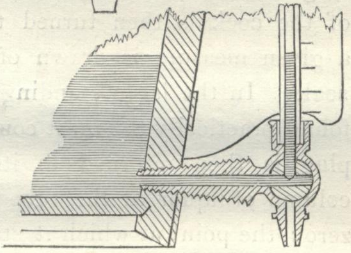


Fig. 3.

three openings, one above, one below, and one in the side; by means of the screw on the latter opening, it is fixed firmly into the cask, as shewn in the section fig. 3. An upright wooden bar is then secured to the outside of the cask, having a groove *b* in it, corresponding with, and being, as it were, a continuation of the upper pipe of the cock *c*: in this groove is placed a glass tube, open at both ends, the lower part of which drops into the upper pipe of the cock, and is fixed there by means of white lead, or any other cement not acted on by spirit or by water: the tube is also secured above by a ring or cap. Parallel with the tube is a brass plate, on which the divisions are subsequently to be marked. The plug of the cock has three ways or openings, as shewn in figs. 3, 4, 5, 6. A tongue or index projects from the plug, indicating the position of one of these ways; it may be seen in fig. 2, the position of which corresponds with that of the sectional view, fig. 3.

The apparatus being complete, as above described, the cock is turned to the position, fig. 3, and the cask is filled at a hole in the top. It is evident, therefore, that the liquor will stand in the tube at the same height that it does in the cask, provided the tube is wide enough to avoid any sensible error from capillary attraction; this height is marked as the 0 or zero of the scale. The plug of the cock is then turned to the position, fig. 6, and a given measure is drawn off, forming the unit of the scale. In the large standing casks, the quantity that is found practically the most convenient is five gallons. The plug is then returned to its former position, and the column of liquor in the tube will now be lower than the zero: the point at which it stands is to be marked on the attached scale; a second quantity of five gallons is to be drawn off, and is to be marked on the scale as before. Proceeding in this manner to draw off successively five gallons at a time, the whole contents of the cask are thus transferred to the scale, each division of which represents five gallons, and the scale may be numbered upwards or downwards, as may be found most convenient. The scale should not be continued to the bottom of the tube, but should terminate at that point where the dregs are usually found to begin.

It is best not to leave a column of liquor constantly in the tube, otherwise a deposit would take place on the inside, and obscure it; when, therefore, any liquor has been drawn off, the plug of the cock should be brought to the position, fig. 4; and previously to drawing off a fresh quantity, the plug should be brought to the position, fig. 6.

By the adoption of this method of graduation, the liquor-dealer may take stock every day, in a few minutes, by merely turning the plugs to the position, fig. 3, and then reading off the number corresponding with the height of liquor in the glass tube attached to each cask.

Mr. Henekey also finds these graduated casks to save much time, and give greater precision in mixing different liquids, to form those compounds which are required by his customers. If, for example, he wants to mix together spirit and syrup in any given proportion, he puts the two liquors into separate casks, on the ground floor, and places an empty cask, also graduated, on the platform above, and then pumps from the lower casks into the upper one the determined quantity of each ingredient; he then allows the mixture to remain for twenty-four hours, after which he reads off the quantity, and by comparing this with the previously known quantity of the separate ingredients, ascertains how much has been lost in volume by condensation, and therefore how much additional price must be charged as an equivalent.

Mr. Henekey's cellar candlestick is constructed so as to be used in any position. In fig. 1 it is in a position for being stuck into the ground, it having a sharp iron point for that purpose; the top is cleft, and has a binding screw *a* to tighten the tin springing candle-clip in the suitable position; the clip opens to receive the candle by pinching the two passing curls *b* and *c*.

In fig. 2 the candle and clip remain in the same position as in fig. 1, though the stick is turned upwards; now the sharp-pointed hook *d* is pulled out of its recess, and turned so as to hang on a shelf.

In fig. 3 the clip is straight with the stick, and it is either held by the hand, or it may be stuck into the wall by its point.

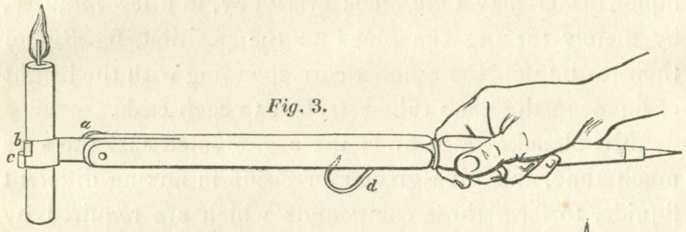


Fig. 3.

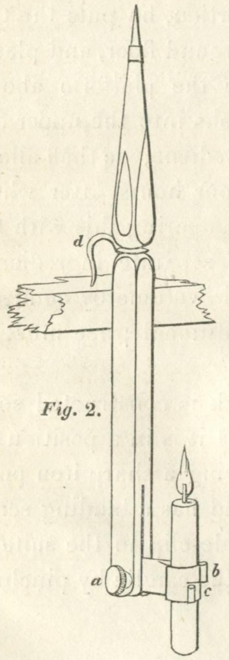


Fig. 2.

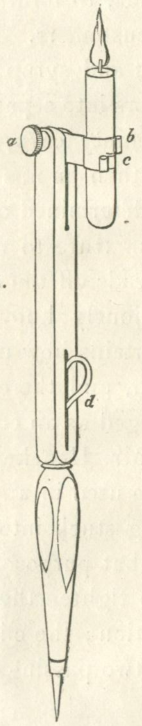


Fig. 1.